Task: 5166

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Lieutenant Governor

State of Utah
DEPARTMENT OF NATURAL RESOURCES

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Division of Oil, Gas and Mining

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January 30, 2013

Ronald Bosshardt
Redmond Minerals, Inc.
475 West 910 South
Heber City, Utah 84032

Subject: First Review of Updated Maps, Redmond Minerals, Inc., Redmond Minerals Mine, M/039/0002, Sanpete County, Utah

Dear Mr. Bosshardt:

The Division of Oil, gas and Mining has completed a review of the amended mine permit maps received by e mail on November 15, 2012. Thank you for your efforts to update your Notice of Intention to Commence Large Mining Operations (NOI). The attached comments identify deficiencies relating to the requirements of R647-4-105. These comments are listed under the applicable Minerals rule headings.

Please update your maps to address these comments and to be consistent with your currently-filed NOI maps (dated 1999) and your working copy of the text. Once the comments have been addressed, please submit hard copies of the amended maps to be reviewed for consistency with both the rules and your 1999 Notice maps. Please notify the Division if you need a copy of your 1999 maps.

Please submit your response to this review by March 4, 2013.

If you have any questions in this regard please contact Peter Brinton at 801-538-5258 or me at 801-538-5261.

Sincerely,

Paul B. Baker
Minerals Program Manager

PBB: pnb: eb
Attachment: Review
cc: Mike Forbush, Redmond Minerals (mikef@redmondminerals.com)
Glen Nebeker, Jones & DeMille (glen.n@jonesanddemille.com)
Brent Lambson, Jones & DeMille (brent@jonesanddemille.com)
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NOTICEOF INTENTION
TO COMMENCE LARGE MINING OPERATIONS
1st Review of Updated Maps

Redmond Minerals, Inc.
Redmond Minerals Mine

M/039/0002
January 28, 2012

R647-4-105 - Maps, Drawings & Photographs

General Map Comments

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
1	General	This review generally evaluated the new maps for consistency with the rules (R647-4-105). Please make the identified changes and, for easy readability, please re-submit the maps as full-size hard copies, in addition to PDFs. Please call if you have questions.	PNB	
2	General	Because the maps in the November 26,1999, NOI and the newly-submitted 2012 maps have significant inconsistencies, only the more readily-observable discrepancies were identified in this review. Please compare the 2012 maps with the approved 1999 maps and any recent changes to onsite conditions, and make needed map modifications accordingly. Once these changes are made, the Division will review updated maps for consistency with the 1999 NOI text and then with current site conditions. Comments numbered 11, 12, and 14 are examples of discrepancies between the submitted and 1999 maps. Compare the reclamation plan in the NOI (p 21 – 29) with the newly-submitted Reclamation Treatments map, and correct discrepancies to match the text in the NOI.	PNB	

105.1 - Topographic base map, boundaries, pre-act disturbance

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
3	Mine Location Map	On this and other pertinent maps, identify the property boundaries where underground workings extend north beyond the presently-identified property boundary. These property owners will also need to be identified in the text of the NOI. (105.1.11)	PNB	
4	Mine Location Map	Identify the roads on the Redmond Minerals property as such, using a legend or text. Updates to the roads should be included (see comment 14). (105.1.12)	PNB	
5	Hydrology Map	Water-related features might need to be shown on a separate hydrology map. See comments 23-28 for the information to be shown on either the site facilities map or a separate hydrology map (105.3.15 & 105.3.18). (105.1.12)	PNB	
6	Site Facilities Map	On this and/or other appropriate maps, identify existing surface facilities within 500 feet of the mining operations. Refer to the aerial photographs, which show features in close proximity of the current or projected disturbance and/or property boundary. (105.1.12)	PNB	

105.2 - Surface facilities map

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
7	Contour Lines	Please make the elevation contours more legible. You could possibly modify the elevation contour dash length or other settings to provide continuous elevation contours.	PNB	
8	Site Facilities Map	Identify approximate boundaries of pits and other mining areas (including highwalls, etc) and identify them with any names associated with them, on this and other maps.	PNB	
9	Site Facilities Map	Identify boundaries of product piles and overburden/waste dumps. (105.2.11)	PNB	
10	Site Facilities Map	Identify the pond into which salty water (that could be considered mining-impacted water or wastewater) is pumped from the French drain, and any other associated facilities or equipment. (105.2.11)	PNB	
11	Site Facilities Map	Identify the areal extent of past, present, and future waste salt disposal (such as current disposal in pits), and other areas of any processing waste disposal. Refer to pages 22-23 of the 1999 NOI (105.2.11)	PNB	
12	Site Facilities Map	Identify the areal extent of garbage, scrap, and other disposal sites, consistent with both the current site operations and the 1999 NOI (see page 22 and the Reclamation Treatments map). (105.2.11)	PNB	
13	Site Facilities Map	Indicate the locations of conveyors, tanks, any active or inactive equipment storage areas, and other facilities that are visible on aerial photographs. Close-ups of the processing / facilities areas might or might not be helpful in showing these items. (105.2.11)	PNB	
14	Site Facilities Map, etc	Additional road segments need to be identified as mining disturbance. These unidentified roads need to be shown on the other maps that show road layers as well. For example, one unidentified mine road visible on aerial photos provides access to the site from the county road just east of the property boundary near the north property boundary (and near another unidentified road). The first road is shown on the 1999 Reclamation Treatments map as requiring reclamation. The second is not. Multiple other road segments on the west and southwest areas of the property, including some in the area of the trash pit, are visible on the aerial photos that are not identified on the new or old maps as being roads. The section of the old haul road into the north pit also needs to be shown and identified. (105.2.11)	PNB	
15	Site Facilities Map	Identify all of the vent shafts. (105.2.11)	PNB	
16	Site Facilities Map, etc	Add one or more disturbance boundary lines clearly outlining the acreage that is both currently disturbed (since 1975) and proposed to be disturbed by mining operations. Undisturbed areas proposed for mining should be identified somehow. It could be based on boundaries included in the Reclamation Treatments map. Unless subsidence is expected, this disturbance boundary should not include the surface area overlying the underground workings. Please include this disturbance boundary on all of the maps. (105.2.12)		
17	Site Facilities Map, etc	Please identify the boundaries of both past and current subsidence areas.	PNB	
18	Site Facilities Map, etc	It is advised that you identify any mining-related disturbance in the proximity of your mine for which Redmond Minerals is not responsible. Any pre-1975 disturbances that are known to have not been worked in since 1975 should be identified as such, i.e. that you are responsible for reclaiming these areas.	PNB	

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
19	Hydrology Map (or Facilities Map)	Water-related requirements of this rule might need to be shown on a separate hydrology map. Please leave as identified any hydrology features that are already included and visible. See comments 23 through 28 for the information needed to be shown on either the Site Facilities map or a separate hydrology map (105.3.15 and 105.3.18). Call for clarification as needed. (105.2.11)	PNB	

105.3 – Other Maps, Drawings or Cross Sections (slopes, roads, pads, etc.)

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
20	Omission	If the erosion control berm is approved as a post-mining, long-term structure, then cross-sections of the erosion control berm may be needed. The Division will need to consider the impacts of a long-term structure with potential to impound water. (105.3.12)	PNB	
21	Permit Boundary	Consider providing a permit boundary that encompasses the disturbance boundary (see comment 16) and all other areas of long-term potential mining that are not included in the disturbance boundary (including any proposed extents of long-term underground mining) on all maps. This may (or may not) facilitate simpler permit modifications in the future. (105.3.18) Contact the Division for more information.	PNB	
22	Hydro Map (or Facilities Map)	Either the Site Facilities map or a separate hydrology map should have elevation contour lines helpful for showing direction of flow, and should show facilities areas, storage tanks, pits, and the underground mine workings and subsidence areas. Indicate any flow leaving the site, and the direction of surface flow (see 1999 NOI maps) and subsurface flow (p 27 of the NOI text). Show enough of both on-site and off-site topography for the Division to understand the basics of the upslope drainage. (105.3.15 and 105.3.18).	PNB	
23	Hydro Map (or Facilities Map)	Identify perennial streams, springs, other bodies of water, water wells, and other existing surface or subsurface facilities within 500 feet of the proposed mining operations that are related to water or hydrology. The following hydrology features should be specifically identified: canals, water management structures (culverts, berms, ditches, stormwater ponds, the salt wastewater storage pond, other ponds, the French drain specific location and dimensions, underground and surface pipes, etc), and other hydrology features shown on the aerial photos or within 500 ft of the property boundary. (105.1.12, 105.2.11, 105.3.15)	PNB	
24	Hydro Map (or Facilities Map)	Specifically identify on this map what appear to be non-perennial drainage channels on the USGS topo map that cross the property or are within 500' of the property boundaries or permit boundary. An example is the intermittent stream on the 1999 Reclamation Treatments map at the north end of the disturbance near the OB-1 dump.	PNB	
25	Hydro Map (or Facilities Map)	Please indicate (by note at least) the approximate distance to any relatively close upstream water bodies and features (such as the canals, irrigation structures, small ponds, etc) and other pertinent hydrology features that may be over 500 feet from the mine site, such as the down-gradient water wells off-site to the east. (105.1.12, 105.2.11, 105.3.15, 105.3.18)	PNB	
26	Hydro Map (or Facilities Map)	When accurate, change the name "Evaporation Pond" on the maps to infer their use in stormwater runoff retention. Other salt producers often have large evaporation ponds that are part of their processing. If any of these ponds hold process water, identify them accordingly. (105.1.12, 105.2.11, 105.3.15)	PNB	
27	Hydro Map (or Facilities Map)	Identify what appear to be multiple active and inactive retention ponds on the northeast end of the property. (105.1.12, 105.2.11, 105.3.15)	PNB	
28	Omission – Soil Map	A soils map needs to be prepared using the Natural Resources Conservation Service (NRCS) website, and which can upload a shapefile of a boundary: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. (105.3.16)	PNB	

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
29	Geology Map	Provide a map legend or otherwise identify the mine roads and geologic units (including "Tg?"). The base map isn't very clear on the PDF copy, and should be more legible in the hardcopy, if possible. (105.3.16)	PNB	
30	Reclamation Treatments Map	Include the mine disturbance boundary (and permit boundary, if created), the distinct areas for which volumes have been calculated should be more clearly visible on the map. Areas requiring "major" and "minor" earthwork should be identifiable. (105.3.17)	PNB	
31	Reclamation Treatments Map	Planned reclamation activities for revegetation (like seeding, ripping, scarifying, amending soil, etc) should be identified by area. Pages 22, 23, and 26-28 of the 1999 NOI show some requirements. Refer to the e mail sent on October 1, 2012. (105.3.17)	PNB	
32	Reclamation Treatments Map	Modify (or consider removing) the colored, semi-transparent hatching for increased visibility of base map details. (105.3.17)	PNB	
33	Reclamation Treatments Map	Identify pre-law mining disturbances and nearby non-mining facilities visible on the aerial photo or at least 500 feet from the property boundary. (105.3.17)	PNB	
34	Reclamation Treatments Map	Identify the current and 1999 NOI garbage, scrap, and other disposal dump areas and the reclamation treatments that will be used. (105.3.17)	PNB	
35	Reclamation Treatments Map	The variance areas at both the salt and clay processing facilities are larger on the submitted maps than they are on the 1999 reclamation treatment map. The maps should be consistent. Call to discuss as needed. (105.3.17)	PNB	
36	Reclamation Treatments Map	Identify in the key that the post-1999 facilities will be removed as part of reclamation. Change the color of the post-1999 buildings to a different color so as not to be confused with the areas that have been reclaimed. (105.3.17)	PNB	
37	Reclamation Treatments Map	Indicate the reclamation treatment for any post-1999 conveyors, tanks, any active or inactive equipment storage areas, and other facilities visible on aerial photographs. Close-ups of facilities areas might be helpful. (105.3.17)	PNB	
38	Reclamation Treatments Map	Based on aerial photos, it appears that an overburden/waste dump is located at the intersection of K and D cross-sections. Correctly label and provide volumes as needed.	PNB	
39	Reclamation Treatments Map	Clearly identify the areas of surface subsidence as such, and indicate the final reclamation treatment for subsided areas. (105.3.17)	PNB	
40	Reclamation Treatments Map	Ensure that the hatching for "Raised berm for drainage containment" is clearly visible on the next copies of the map. It appears that this berm is to be reclaimed at the end of the mine life. The NOI text should discuss berms for drainage control (including reclamation), and maps should be consistent with the text. (105.3.17)	PNB	
41	Reclamation Treatments Map	Identify the reclamation treatment for the charcoal gray area identified as "Asphalt Surfacing". It appears the Variance layer is masked by the asphalt layer. (105.3.17)	PNB	
42	Reclamation Treatments Map	Disturbance boundaries / reclamation treatment boundaries differ, both requiring more or less reclamation than is indicated on the 1999 maps, depending on the location. It is understood that most of this is likely due to mining activities since 1999. Please verify that locations where reclamation requirements differ are correct on the new maps. Some discussion would be beneficial at some point.	PNB	
43	Cross-Sections (General)	Show distances on the bottom of the cross-sections. Horizontal and vertical scales should be equal.	PNB	
44	Cross-Sections	Please label roads, named pits, product piles, and overburden dumps.	PNB	
45	Cross-Sections	After considering swell, it appears that generally more fill material will be required to create reclamation surfaces than can be provided by cutting material from the current (existing) surface. If this is the case, the source of material will need to be discussed in the reclamation plan, and reclamation costs calculated accordingly.	PNB	

105.5 - Underground and Surface Mine Development Maps

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
46	Underground Mining Map	Identify boundaries of past and current subsidence, and any locations of projected subsidence on this map.	PNB	
47	Underground Mining Map	Identify the elevations of underground mine workings. Please include the survey date of the underground workings.	PNB	
48	Underground Mining Map	Please include the boundaries of pits on this map for reference.	PNB	